

Work Order ID 55180

January 08, 2010 1:19:48 PM



Page 1

Item ID: D3977-1

Accept



Setup Start



Revision ID:

Item Name: Bolt

Stop



Start Date: 1/11/2010 Start Qty: 20.00



Cust Item ID:

Required Date: 1/18/2010 Req'd Qty: 20.00



Customer:

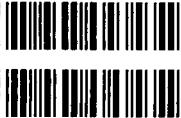
Reference:

Approvals: Process Plan: MF

Date: 10-01-08 Tooling:

Date:

Run Start



QC:

Date: SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3977

A

0.00



Purchasing

Memo

0.00

CL 10/01/08



Purchasing

Issue P/O: 11073

Purchase Part Number: 92356A662

Supplier: McMaster-Carr

Certificate of conformity is required

110

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

10/01/12 (20)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55180



Page 2

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Required Date: 1/18/2010 Req'd Qty: 20.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

120



QC

Quality Control

Operation
Description

QC6- Inspect dimensions to drawing

Set Up/
Run Hours

0.00

Draw
Number

Rev.

Plan
CodeAccept
QtyReject
QtyReject
NumberReject
StampCount
(x20)

PTC →

130



Small Fab

Small Fab

Memo

DRILL HOLE AS PER DWG

0.00

0.00

10/01/26

20 ✓

140



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

→ 10/01/26

Count
(x20) ✓

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3977-1 PAR #: Fault Category: Supplier NCR: Yes DQA: Date: 10/01/28

Resolution: Disposition: QA: N/C Closed: Date: _____

NCR: 55180		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10/01/19	120	BOLTS DIFFERS FROM DWG, PER ATTACHED EMAILS.	10/01/19 G31042	ACCEPTABLE DEVIATION PER ATTACHED EMAIL.	N/A	S 10/01/19	10/01/19 G31042	S 10/01/19

NOTE: Date & initial all entries

Work Order ID 55180

January 08, 2010 1:19:48 PM



Page 3

Item ID: D3977-1

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Setup

Start



Revision ID:

Item Name: Bolt

Stop



Start Date: 1/11/2010 Start Qty: 20.00



Cust Item ID:

Required Date: 1/18/2010 Req'd Qty: 20.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

150



Packaging

Packaging

Operation
DescriptionIdentify as per dwg & Stock Location: 105Set Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

0.00

10-1-27

10-1-27 SP

160



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

10/01/27 JF

MF

10-1-27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

January 08, 2010 1:19:47 PM

Page 1

Work Order ID: 55180



Parent Item: D3977-1



Parent Item Name: Bolt

Start Date: 1/11/2010

Required Date: 1/18/2010

Comments: IPP RevA: New issue DD verified by:EC

Start Qty: 20.00

Required Qty: 20.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
92356A662 Bolt		Purchased		No		110	Each	0.0000	20.0000		10-11-27-2010	

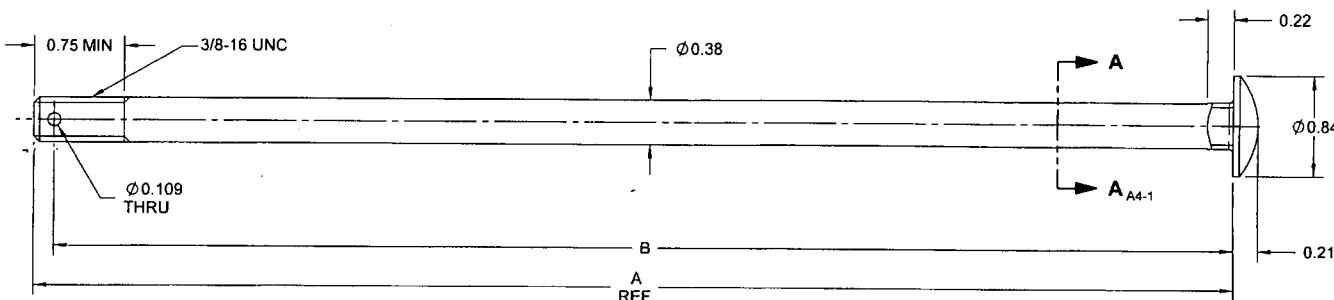
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

SPECIFICATION CONTROL DRAWING

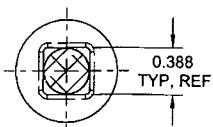


D3977-X BOLT (CARRIAGE), UNC

DART P/N	A	B	MATERIAL	WEIGHT (lbs)	SUPPLIER	SUPPLIER P/N
D3977-1	10.00	9.830	18-8 STAINLESS STEEL	0.34	McMASTER-CARR-	92356A662

**55180

RELEASED
09/07/13



SECTION A-A C3-1

NOTES:
 1) MATERIAL: SEE TABLE
 2) FINISH: NONE
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 6) IDENTIFICATION: NONE
 7) WEIGHT: SEE TABLE

A	NEW ISSUE	MB	09.07.13
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED	PS		
MFG. APPR.	NO		
APPROVED	AN		
DE APPR.	PS		
DATE	09.07.13	SCALE	NTS

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D3977 REV. A
SHEET 1 OF 1
TITLE: BOLT (CARRIAGE), UNC
SCALE: NTS

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & Initial all entries



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO11073**

Purchase Order Date 1/08/10
PO Print Date 1/08/10

Page Number 1 of 1

Order From :

MCMASTER-CARR SUPPLY CO,
P.O. BOX 7690
CHICAGO, IL 60680-7690
US

VU-MCM001

FAXED
(Q1010)

Contact Name
Vendor Phone 330 995 5500
Vendor Fax 330 995 9600
Vendor Account Nbr

Buyer Chantal Lavoie
Requisition Nbr
Tax Resale Nbr 10127-2607
Terms Net 30
Currency USD
FOB

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Ext.
1		2584A91LEFT HAND TAP	1/12/10 Yes	1.00 Each	Purolator ground	\$69.3400	

Deliver To: CNC

2	92356A662	Bolt	1/12/10 Yes	20.00 Each	Purolator ground	\$5.3500
---	-----------	------	----------------	---------------	------------------	----------

3	91853A031	Nut	1/12/10 Yes	20.00 Each	Purolator ground	\$0.5500
---	-----------	-----	----------------	---------------	------------------	----------

Special Inst: AS PER DWG D3977 REV. A
B55180
MCMASTER P/N: 92356A662

Special Inst: AS PER DWG D3978 REV. A
B55182
MCMASTER P/N: 91853A031

PO Total:

CERTIFICATE OF CONFORMITY
REQ'D UPON DELIVERY

CL *u*
No substitution or deviation without
consent.
Certificate of Conformity or Mater
Certification required when applica

Change Nbr: 1

Change Date: 1/08/10

200 Aurora Industrial Parkway
Aurora OH 44202
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
PO11073

McMaster-Carr Number
5683739-02

Page 1 of 1

01/08/2010

Line	Description	Ordered	Shipped			
2	92356A662 18-8 Stainless Steel Round Head Square Neck Carriage Screw, 3/8-16 Thread, 10" Length, Packs of 1	20 Packs	+ 15	2 - 716 - 07	24 - 02 A662	15 PK One EA/PK
	Unit Price: \$6.04 Extended Price: \$90.60			2 - 700		3
3	91853A031 18-8 Stainless Steel Slotted Hex Nut, Style B, 3/8"-16 Thread Size, 9/16" W, 13/32" Overall H, Packs of 1	20 Packs	20			
	Unit Price: \$3.06 Extended Price: \$61.20					

Shipped separately from our Chicago warehouse on 01/08

1	2584A91	Left-Hand Thread High-Speed Steel Tap, Bottoming, 1-1/8"-7 NC, H4 Pitch Diameter, 4 Flute	1 Each	1	
2	92356A662	18-8 Stainless Steel Round Head Square Neck Carriage Screw, 3/8-16 Thread, 10" Length	20 Packs	5	

Charges for this shipment

Merchandise	Amount	\$151.80
Sales Tax:		\$7.59
Total:		\$159.39

Dart Aerospace Ltd

Assembly
Area

11

Cycle

43

Shelf

115

4

lin

Documents

2

FW1WBP
01/08/201
12:57/13:
006



100 Aurora Industrial Parkway
Aurora OH 44202
330-995-5500
je.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

McMaster-Carr Number
5683739-01

01/08/2010

Line	Description	Ordered	Shipped					
1 2584A91	Left-Hand Thread High-Speed Steel Tap, Bottoming, 1-1/8"-7 NC, H4 Pitch Diameter, 4 Flute	1 Each	1	1 - 302 - 14	63 - 21	A91	1 EA	1
	Unit Price: \$77.66 Extended Price: \$77.66							
2 92356A662	18-8 Stainless Steel Round Head Square Neck Carriage Screw, 3/8-16 Thread, 10" Length, Packs of 1	20 Packs	5	1 - 563				2
	Unit Price: \$6.04 Extended Price: \$30.20							

Shipped separately from our Cleveland warehouse on 01/08

2 92356A662	18-8 Stainless Steel Round Head Square Neck Carriage Screw, 3/8-16 Thread, 10" Length	20 Packs	15
3 91853A031	18-8 Stainless Steel Slotted Hex Nut, Style B, 3/8"-16 Thread Size, 9/16" W, 13/32" Overall H	20 Packs	20

Charges for this shipment

Merchandise Amount:	\$107.86
Sales Tax:	\$5.39
Total:	\$113.25

Dart Aerospace Ltd

EXP

Assembly
Area

2

Cycle

41

Shelf

211

2 lbs

2 lines

Documents

2

SS-R-0707

EW1BSPA8
01/08/2010
12:57/13:35
250



0100848617661



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PO REPRINT

Purchase Order ID PO11073

Purchase Order Date 1/08/10
PO Print Date 1/15/10

Page Number 1 of 1

Order From : VU-MCM001

MCMASTER-CARR SUPPLY CO,
P.O. BOX 7690
CHICAGO, IL 60680-7690
US

Contact Name	Buyer	Chantal Lavoie
Vendor Phone	Requisition Nbr	
Vendor Fax	Tax Resale Nbr	10127-2607
Vendor Account Nbr	Terms	Net 30
	Currency	USD
	FOB	

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req. Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1		2584A91LEFT HAND TAP	1/12/10 Yes	1.00 Each	Purolator ground	\$77.6600	\$77.66
Deliver To: CNC							
2	92356A662	Bolt	1/12/10 Yes	20.00 Each	Purolator ground	\$6.0400	\$120.80
Special Inst: AS PER DWG D3977 REV. A B55180 MCMASTER P/N: 92356A662							
3	91853A031	Nut	1/12/10 Yes	20.00 Each	Purolator ground	\$3.0600	\$61.20
Special Inst: AS PER DWG D3978 REV. A B55182 MCMASTER P/N: 91853A031							
PO Total:							\$259.66

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable

Change Nbr: 2

Change Date: 1/12/10

Marc Bellavance

From: David Shepherd [dshepherd@dartaero.com]
Sent: January 19, 2010 3:17 PM
To: 'Marc Bellavance'
Cc: 'Lacelle, Linda'
Subject: RE: D3977-1 Bolt (re D412-761-049)

Marc,

For what this part is used for, I don't see a problem with this deviation.

David

From: Marc Bellavance [mailto:mbellavance@dartaero.com]
Sent: Tuesday, January 19, 2010 6:42 AM
To: 'David Shepherd'
Cc: Lacelle, Linda
Subject: D3977-1 Bolt (re D412-761-049)
Importance: High

Good morning David,

I was asked by Production/QC to verify P/N D3977-1 against the drawing (attached).

The dimensions are all within tolerance at the exception of the shank diameter. Per drawing, the diameter must be $\varnothing 0.38" +/- 0.03"$. The measurements I took are $\varnothing 0.370"$ (acceptable) and $\varnothing 0.331"$ to $\varnothing 0.340"$ (both under tolerance). I am just wondering if those would still be acceptable based on the fact that the loads will be distributed along the entire length of the shank rather than punctual. I have the impression that the inconsistencies are due to the manufacturing method as some seem forged while others seem casted.

Thanks in advance,

Marc Bellavance
Mechanical Designer/Technical Support

DART aerospace Ltd.

Tel: 613-632-5200 Ext. 240

Fax: 613-632-9311

E-mail: mbellavance@dartaero.com

Web: www.dartaero.com

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No virus found in this incoming message.

Checked by AVG - www.avg.com

Version: 8.5.432 / Virus Database: 270.14.150/2632 - Release Date: 01/19/10 07:34:00

L Lacelle

From: David Shepherd [dshepherd@dartaero.com]

Sent: January 19, 2010 3:17 PM

To: 'Marc Bellavance'

Cc: 'Lacelle, Linda'

Subject: RE: D3977-1 Bolt (re D412-761-049)

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E-mail: mbellavance@dartaero.com

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Sent: January 19, 2010 8:42 AM
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Cc: Lacelle, Linda
Subject: D3977-1 Bolt (re D412-761-049)
Importance: High
Attachments: D3977-RevA.pdf

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